Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method for forming a supported palladium membrane used for hydrogen purification and production, comprising steps of:

providing a porous stainless steel support;

mechanically polishing said porous stainless steel support by one of an abrasive paper and an ultrasonic vibration;

electro-polishing said porous stainless steel support;

acid-washing said porous stainless steel support with an acid solution;

activating said porous stainless steel support by heating;

filling said porous stainless steel support with a metal;

electroless plating a palladium membrane on said porous stainless steel support with a palladium salt solution; ~~and~~

DC sputtering an additional palladium membrane further on said porous stainless steel support;

annealing said palladium membrane.

2. (original) The method according to claim 1 wherein said support is a porous stainless steel support.

3. (canceled).

4. (original) The method according to claim 1 wherein said metal is one selected from a group consisting of palladium, niobium, tantalum and a combination thereof.

5. (original) The method according to claim 1 wherein said metal is a hydrogen permeable fine metal powder.

6. (original) The method according to claim 5 wherein said metal powder is mixed with one of a palladium paste and a high temperature epoxy resin.

7. (canceled).

8. (canceled).

9. (original) The method according to claim 1 wherein said palladium salt solution contains 4.2~5.4 g/L $Pd(NH_3)_4Cl_2$, 60~74 g/L EDTA, 600~700 g/L NH_4OH and 0.32~0.4 c.c./L NH_2NH_2.

10. (original) The method according to claim 1 wherein said electroless plating is performed for 120~360 minutes.

11. (original) The method according to claim 1 wherein said electroless plating is performed at 50~70 °C.

12. (original) The method according to claim 1 wherein a target of said DC sputtering is 99~99.9% palladium.

13. (original) The method according to claim 1 wherein said DC sputtering is performed under a vacuum pressure of 10^{-2}~10^{-5} torr and a power input of 200~500 W at 25~250 °C.

14. (original) The method according to claim 1 wherein said DC sputtering is performed for 60~120 minutes.

15. (original) The method according to claim 1 wherein said palladium membrane has a thickness of 3~30 μm after said DC sputtering.

16. (currently amended) The method according to claim 1 ~~further comprising a step of~~ wherein said annealing ~~said palladium membrane~~ step is performed at a temperature ranged from 450 to ~550 °C under a nitrogen atmosphere including ~~3~10%~~ a hydrogen concentration ranged from 3% to 10% for a period ranged from 4 to ~8 hours.

17. (currently amended) A method for forming a supported palladium membrane used for hydrogen purification and production, comprising steps of:

providing a porous stainless steel support;

mechanically polishing said porous stainless steel support by one of an abrasive paper and an ultrasonic vibration;

electro-polishing said porous stainless steel support;

acid-washing said porous stainless steel support with an acid solution;

activating said porous stainless steel support by heating;

filling said porous stainless steel support with a metal; ~~and~~

electroless plating a palladium membrane on said porous stainless steel support with a palladium salt solution; and

annealing said palladium membrane.

18. (currently amended) A method for forming a supported Pd/Ag membrane used for hydrogen purification and production, comprising steps of:

providing a porous stainless steel support;

mechanically polishing said porous stainless steel support by one of an abrasive paper and an ultrasonic vibration;

electro-polishing said porous stainless steel support;

acid-washing said porous stainless steel support with an acid solution;

activating said porous stainless steel support by heating;

filling said porous stainless steel support with a metal;

electroless plating a palladium membrane on said porous stainless steel support with a palladium salt solution;

electroless plating a silver membrane on said porous stainless steel support with a silver salt solution;

annealing said palladium membrane and said silver membrane to form a Pd/Ag membrane; and

DC sputtering an additional Pd/Ag membrane further on said porous stainless steel support.

19. (original) The method according to claim 18 wherein said support is a porous stainless steel support.

20. (canceled).

21. (original) The method according to claim 18 wherein said metal is one selected from a group consisting of palladium, niobium, tantalum and a combination thereof.

22. (original) The method according to claim 18 wherein said metal is a hydrogen permeable fine metal powder.

23. (original) The method according to claim 22 wherein said metal powder is mixed with one of a palladium paste and a high temperature epoxy resin.

24. (canceled).

25. (canceled).

26. (original) The method according to claim 18 wherein said palladium salt solution contains 4.2~5.4 g/L $Pd(NH_3)_4Cl_2$, 60~74 g/L EDTA, 600~700 g/L NH_4OH and 0.32~0.4 c.c./L NH_2NH_2.

27. (original) The method according to claim 18 wherein said silver salt solution contains 2.1~1 g/L $AgNO_3$, 60~74 g/L EDTA, 600~700 g/L NH_4OH and 0.32~0.4 c.c./L NH_2NH_2.

28. (original) The method according to claim 18 wherein said electroless plating is performed at 50~70 °C.

29. (original) The method according to claim 18 wherein a target of said DC sputtering is a Pd/Ag alloy with a weight composition ratio of 77/23~60/40.

30. (original) The method according to claim 18 wherein said DC sputtering is performed under a vacuum pressure of 10^{-2}~10^{-5} torr and a power input of 200~500 W at 25~250 °C.

31. (original) The method according to claim 18 wherein said step of annealing said palladium membrane and said silver membrane is performed at 450~550 °C under a nitrogen atmosphere including 3~10% hydrogen for 4~8 hours.

32. (original) The method according to claim 18 wherein said palladium membrane has a thickness of 3~30 μm after said DC sputtering.

33. (currently amended) A method for forming a supported Pd/Ag membrane used for hydrogen purification and production, comprising steps of:

providing a porous stainless steel support;

mechanically polishing said porous stainless steel support by one of an abrasive paper and an ultrasonic vibration;

electro-polishing said porous stainless steel support;

acid-washing said porous stainless steel support with an acid solution; and

activating said porous stainless steel support by heating;

filling said porous stainless steel support with a metal;

electroless plating a palladium membrane on said porous stainless steel support with a palladium salt solution;

electroless plating a silver membrane on said porous stainless steel support with a silver salt solution; and

annealing said palladium membrane and said silver membrane to form a Pd/Ag membrane.

34. (new) The method according to claim 1 wherein said acid solution is HCl and said concentration thereof is ranged from 8 to 10 M HCl.

35. (new) The method according to claim 1 wherein said activating step is performed under a temperature ranged from 40 to 60 °C.

36. (new) The method according to claim 17 wherein said acid solution is HCl and said concentration thereof is ranged from 8 to 10 M HCl.

37. (new) The method according to claim 17 wherein said activating step is performed under a temperature ranged from 40 to 60 °C.

38. (new) The method according to claim 17 wherein said annealing step is performed at a temperature ranged from 450 to 550 °C under a nitrogen atmosphere including a hydrogen concentration ranged from 3 to 10% for a period ranged from 4 to 8 hours.

39. (new) The method according to claim 18 wherein said acid solution is HCl and said concentration thereof is ranged from 8 to 10 M HCl.

40. (new) The method according to claim 18 wherein said activating step is performed under a temperature ranged from 40 to 60 °C.

41. (new) The method according to claim 33 wherein said acid solution is HCl and said concentration thereof is ranged from 8 to 10 M HCl.

42. (new) The method according to claim 33 wherein said activating step is performed under a temperature ranged from 40 to 60 °C.

43. (new) The method according to claim 33 wherein said step of annealing said palladium membrane and said silver membrane is performed at a temperature ranged from 450 to 550 °C under a nitrogen atmosphere including a hydrogen concentration ranged from 3 to 10% for a period ranged from 4 to 8 hours.